

Sheet 8

CBP time Management

Two technician assistant A, P

Do five tasks (variables) F, H, P, S, T

For each Teaching assistant have 4 time slot

1) Size of the space

4 time slot for each teacher then

we have 8 time slots for 5 tasks

$$\therefore \text{space} = 8^5 \rightarrow \text{task}$$

2) Unary constraint

d, e, i, j

3)

	F	H	P	S	T
A1 ✓	A1 ✓	A1 ✓	A1 ✓	A1 ✓	A1 ✓
A2 ✓	A2 ✓	A2 ✓	A2 ✓	A2 ✓	A2 ✓
A3 ✓	A3 ✓	A3 ✓	A3 ✓	A3	A3 ✓
A4 ✓	A4	A4 ✓	A4 ✓	A4	A4
P1	P1 ✓	P1 ✓	P1 ✓	P1 ✓	P1 ✓
P2	P2 ✓	P2 ✓	P2 ✓	P2 ✓	P2 ✓
P3	P3 ✓	P3 ✓	P3 ✓	P3	P3 ✓
P4	P4	P4	P4 ✓	P4	P4

After Enforce all unary constraint

4) select S as A2 and force forward checking

	E	H	P	S	T
A1	(A1)		A1		
A2				(A2)	
A3		A3	A3		
A4			A4		
P1			P1		A
P2					
P3		P3	P3		P3
P4			P4		

5) Based on Minimum Remaining values (MRV)
(breaking alphabetically)

F Minimum Remaining values

6) Assigning variable in (5) the perform forward checking

	E	H	P	S	T
✓A1	A1	(A1)	A1	A1	A1
A2	A2	A2	A2	A2✓	A2
A3	A3✓	A3✓	A3✓	A3	A3
A4	A4	A4✓	A4✓	A4	A4
P1	P1	P1✓	P1✓	P1	P1
P2	P2	P2	P2	P2	P2✓
P3	P3✓	P3✓	P3✓	P3	P3✓
P4	P4	P4✓	P4✓	P4	P4

7) select S to A2 enforce consistency and check remaining

E	H	F	S	T
1				
A1 ✓	A1	A1	A1	A1
A2	A2	A2	A2 ✓	A2
A3	A3 ✓	A3	A3	A3
A4	A4	A4	A4	A4
P1	P1	P1 ✓	P1	P1
P2	P2	P2	P2	P2
P3	P3	P3	P3	P3 ✓
P4	P4	P4	P4	P4

8)

Arc Consistency Removes more values than forward checking because ^{arc} consistency checks consistency between any pair of variables, while forward checking only checks relation between pairs of assigned and unassigned variables